ABSTRACT

Disclosed is a multiplexing method and apparatus that allows holograms to be spatially multiplexed with partial spatial overlap between neighboring stacks of holograms. Each individual stack can additionally take full advantage of an alternate multiplexing scheme such as angle, wavelength, phase code, peristrophic, or fractal multiplexing, for example. An amount equal to the beam waist of the signal beam writing a hologram separates individual stacks of holograms. Upon reconstruction, a hologram and its neighbors will all be readout simultaneously. An filter is placed at the beam waist of the reconstructed data such that the neighbors that are read out are not transmitted to the camera plane. Alternatively, these unwanted reconstructions can be filtered out with an angular filter at an intermediate plane in the optical system that has a limited angular passband.